

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY

FOREST INSECT INVESTIGATIONS

RECOMMENDATIONS FOR INSTITUTING EXPERIMENTAL
PROJECTS TO DETERMINE THE ECONOMICS OF CONTROLLING
NORMAL INFESTATIONS OF THE MOUNTAIN PINE BEETLE IN WHITE PINE

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INTRODUCTION

During the season of 1924 an experimental control project was inaugurated on the headwaters of Independence Creek, Coeur d'Alene National Forest. Maintenance work was conducted during the seasons of 1925 and 1926. The infestation within this area had been studied since 1918 and the volume of white pine destroyed by the mountain pine beetle recorded annually. The purpose of this experimental control project was to test the economics of applying our present methods of control to an endemic infestation of the mountain pine beetle in white pine for the purpose of reducing to a minimum the annual loss. This project was instituted on a 5-year program and the results obtained following the 1924 and 1925 control operations proved to be very satisfactory. During the summer of 1926 a severe fire swept over this area which destroyed all of the pine within the drainage. This unfortunate occurrence prohibited the recording of results secured from the 1926 control work, which left only two years' control data upon which to base the results of the experiment. For further information relative to this project and the results

obtained, reference is made to the final report prepared by the writer at this station under date of April 6, 1927.

The data obtained from this experimental project indicated that the control of endemic or normal infestations of the mountain pine beetle in merchantable white pine stands was an economical undertaking. However, the writer does not feel that the results of two seasons' work have sufficient weight to justify the acceptance of this data as final. It is realized that there are many factors which could have influenced the results obtained, so further study of this problem is necessary before any large-scale maintenance control projects should be recommended.

Justification of Study

Throughout all of the white pine stands of northern Idaho there is what we have been pleased to call a normal or endemic infestation. The loss from this type of infestation occurs as single trees or small groups scattered throughout the area. This loss, which is insidious in character, is usually overlooked by the casual traveler in the forest who does not recognize the fact that insects are responsible for the death of the many old snags which are scattered more or less regularly along his path. It may be that the first indication which one has of the presence of such an infestation is the occurrence of an unusual number of dead trees along a trail or around small parks or clearings. The volume of timber which is usually destroyed each year by a normal infestation is not an alarming figure, but when taken over a period of years mounts into a rather large per cent of the total volume.

With the idea of securing additional data upon this problem to determine if maintenance control of endemic infestations in white pine is an economical undertaking, an additional study of this problem is planned. It is hoped that these studies will show that the annual loss from normal infestations can be reduced to a minimum, at a cost which will be well within the value of the stumpage saved. As a further justification of maintenance control, such work would tend to reduce to a minimum the possibility of an epidemic occurring within these stands, which often results in the destruction of a very large per cent of the volume within a few years.

Plan for the Continuation of this Study

Two drainages within the Coeur d'Alene National Forest have been selected for the renewal of this study. These areas, which are known as the Elk Creek and Cascade Creek drainages, have been surveyed and normal infestations found in each. For the past six years a fairly accurate survey has been made of the Cascade Creek region and annual loss recorded. This fact will be a big help in determining the results obtained by experimental control measures.

Description of the Area

These two drainages lie, for the most part, in T. 51 N., and Rs. 1 E. and 1 W. A map of these two areas, showing the white pine type, burns, and logged areas, is attached to this report. It will be seen that these two areas are not exactly isolated from other white pine regions; however this is not believed to be a serious

objection. From control work instituted within these regions, data as to the relation of the existing infestation to those areas adjacent, as well as the effect of control, could be secured.

Within the two drainages there are approximately 68 million board feet of merchantable white pine which is contained within 6,300 acres.

In the Elk Creek drainage there are approximately 77 million board feet, of which 47 million are of merchantable white pine. Of the white pine volume, 35 million board feet are publicly-owned and 12 million board feet controlled by private interests. The white pine acreage of this drainage amounts to approximately 4,600 acres.

The Cascade Creek drainage supports a timber stand amounting to 32 million board feet, of which 21 million are merchantable white pine. Of the total white pine volume, 14 million board feet are publicly-owned, while 7 million are controlled by private interests. There are approximately 1,700 acres of white pine within this drainage.

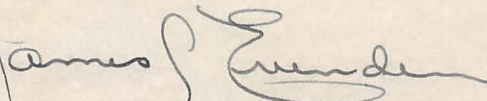
On the Stewart and Potter Creek drainages there is a stand of timber comparable to that which exists on the proposed control areas. As these two drainages are adjacent to the Elk Creek unit, it is planned to use them as a check area to assist in determining the results obtained by control. No control measures would be instituted within this area and a check survey would be made each year in order to determine the general trend of the infestation.

Recommendations

In view of the economic importance of this study which has as its objective the reduction of the annual loss within the white pine stands of northern Idaho, it is recommended that a 5-year plan of maintenance control be adopted for the Cascade and Elk Creek drainages. For this purpose it is recommended that \$1,200 be allotted for this work during the season of 1928 and that for the ensuing years sufficient allotments be made to meet the cost of treating the infestation within these areas each year. It is possible that a portion of this fund could be secured from private interests controlling the alienated lands within these areas.

It is further recommended that this project be contingent upon the institution of control measures within the Big Hole Basin during the 1928 season. It is realized that in the event of the Big Hole project being continued, it will be necessary to concentrate all funds and personnel within that area which would prohibit the institution of this experiment.

Respectfully Submitted,



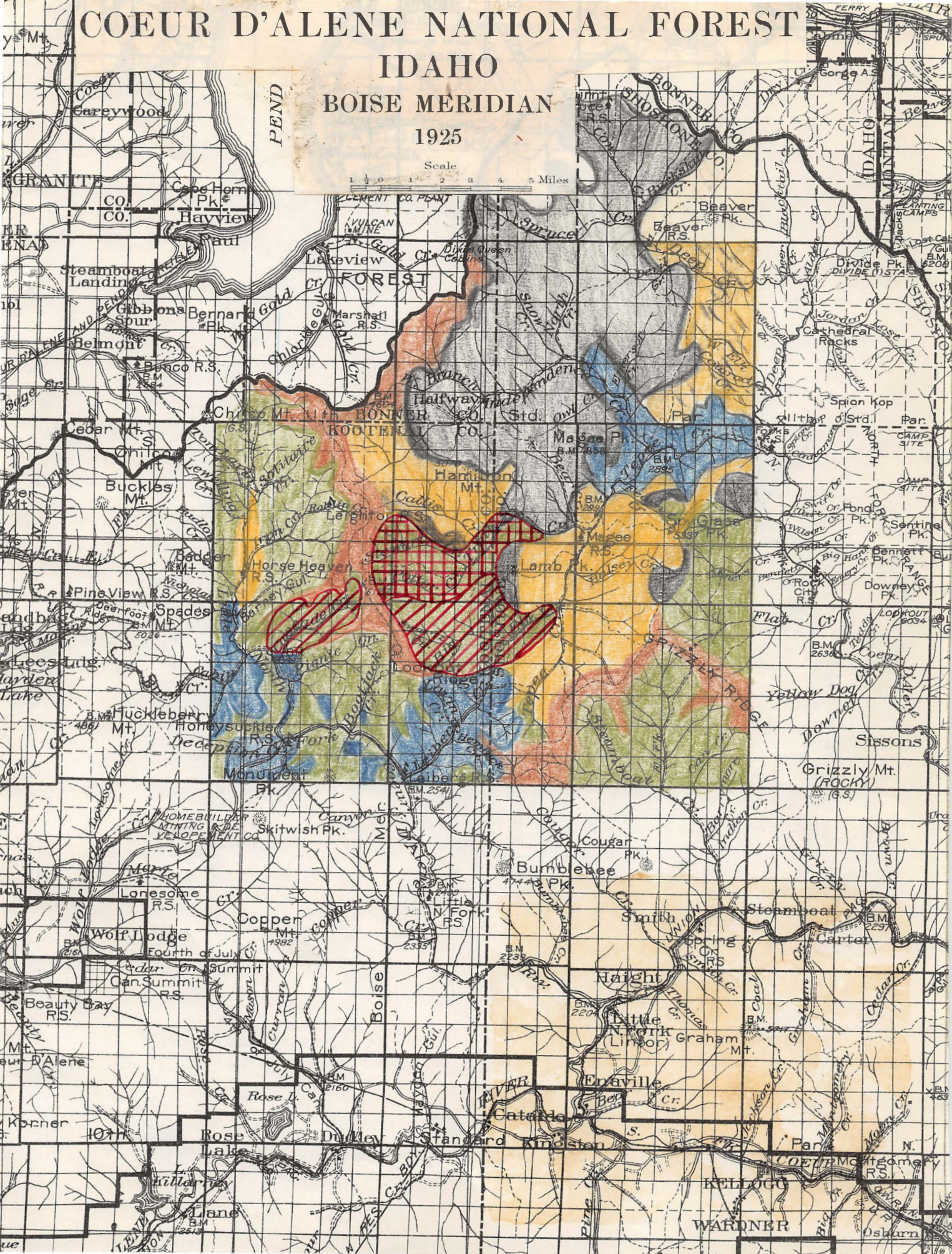
James C. Evenden
Associate Entomologist.

January 17, 1928.

BOISE MERIDIAN
1925

1925

Scale
2 3 4 5 Miles



Legend



Merchantable White Pine



Subalpine Type



Reproduction



Logged Areas



Burned Areas



Big Elk Cr. & Cascade Cr. Areas



Potter-Stewart Creeks Check Area
